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10/810,504	03/26/2004	Robert J. Krupa	16700-00016	8172

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EXAMINER	
SAWHNEY, HARGOBIND S	
ART UNIT	**PAPER NUMBER**
2875	

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/810,504	KRUPA ET AL.	
	Examiner	Art Unit	
	Hargobind S. Sawhney	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/5/2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 21-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 21-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/26/2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on December 5, 2005 has been entered. Accordingly:

- Claims 1-15, 21-26 and 29-31 have been amended;
- Claims 16-20 have been canceled; and
- New claims 32-37 have been added.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following elements must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim 23, lines 1 and 2, " the coupling device located within an endoscope";

Claim 24, lines 1 and 2, "the light coupling device of claim 1 being self contained source of illumination comprising a battery; and

Claim 26, lines 2-4, " a system comprising an endoscope".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 23, lines 1 and 2, " the coupling device located within an endoscope";

Claim 24, lines 1 and 2, "the light coupling device of claim 1 being a self contained source of illumination comprising a battery; and

Claim 26, lines 2-4, " a system comprising an endoscope".

Claim Objections

4. Claims 1-37 are objected to because of the following informalities:

Claim 1, line 3, "a solid state light emitting device without an encasement" could be broadly interpreted as a solid state light emitting device without any type of housing, casing or encasement. Any light-emitting device would need a casing for its environmental and physical protection. The above-indicated limitation needs to be rephrased as – a bare-chip solid-state light emitting device without having a covering on the light emitting surface of the chip --. As, each of other amended independent claims 25, 26, 29, 30, 32 and 34 includes the deficiency similar as detailed above for Claim 1, these claims are also objected.

Claim 8, line 2, the limitation "a bundle of a large number of small diameter individual fibers" is not specific to be definite. Therefore, it does not any definite limitation. The above-indicated limitation may be rephrased as -- a bundle of optic fibers--.

Claims 2-24 are necessarily objected because of their dependency on the objected base Claim 1.

Claims 27 and 28 are necessarily objected because of their dependency on the objected base Claim 26.

Claim 31 is necessarily objected because of their dependency on the objected base Claim 30.

Claims 33-37 are necessarily objected because of their dependency on the objected base Claim 32.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 8, 10-13, 29, 30, 32 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsubara (Japanese Patent No.: JP 5264871), hereinafter referred as Matsubara.

Regarding claims 1, 2, 8, 10-13, 29, 30, 32 and 34-36, Matsubara discloses a light coupling device (Figure 1) comprising:

- a bare-chip solid-state light emitting device without a covering or encasement, on the substantially flat light emitting surface of the chip 31 (Figure1, English translated abstract);
- a light-guide 4 having a proximal light-receiving end adjacent the light-emitting surface, and the proximal light-receiving end optically coupled to the light-emitting surface (Figure1, English translated abstract);
- the bare-chip solid-state light emitting device including light-emitting diode 31 (Figure1, English translated abstract);
- the light-emitting surface of the bare-chip solid-state light emitting device being a substantially flat surface (Figure1, English translated abstract);

- the proximal end of the light guide 4 being substantially flat , and the end located directly on the light-emitting surface of the light-emitting device (Figure1, English translated abstract);
- the light guide 4 being a bundle of a bundle of fiber optics operationally require to be formed of either glass of plastic with light-transmitting properties (Figure1, English translated abstract);
- a mechanical light guide fixing device 1 coupled to the light guide 4, and the mechanical light guide fixing device 1 positioning the light guide 4 directly against a light –emitting surface of the light emitting device(Figure 1);
- a ferrule 1 located close to but not at the proximal end of the fiber bundle 4 (Figure1, English translated abstract);
- a window, interpreted as an open cavity above the light-emitting surface, disposed between the substantially flat light –emitting surface of LEDs 31-34 and the light guide 4 (Figure1, English translated abstract).

7. Claims 1, 2, 15, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Goodwin (US Patent No.: 5,586,207 B2).

Regarding claims 1, 2, 15, 21 and 22, Woodwin ('207) discloses a light coupling device (Figure 3) comprising:

- a bare-chip solid-state light emitting device 310 without encasement disposed on a light-emitting surface (Figure 5, column 4, lines 20, 21);

- a light-guide 320 having proximal light-receiving end- adjacent to the light-emitting device 310, and the distal end further from the light-emitting surface of the LED(Figure 5, column 4, lines 20-22);
- the bare-chip solid-state light emitting device 310 including light-emitting diode (LED) (Figures 7A and 7B, column 7, lines 15-17);
- a light conductive material 100 positioned between the light-emitting device 310 and the proximal end of the light guide 320 (Figure 5, column 5, lines 20-22); and the light conductive material 100 having a refractive index between that of the light-emitting surface of the light emitting device 310 and that of the light guide 320 (Figure 5, column 7, lines 36-42); and
- the light guide 320 being a single glass fiber (Figure 5, column 4, lines 22 and 23).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 3-7, 23, 31 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (Japanese Patent No.: JP 5264871), hereinafter referred as Matsubara, in view of Kazakevich (US Patent No.: 6,921,920 B2).

Regarding Claim 3, Matsubara discloses a light-coupling device (Figure 1), also interpreted as an illumination system, comprising a bare-chip solid-state light-emitting device (LED-chip). However, Matsubara does not specifically teach the LED-chip emitting white light. On the other hand, Kazakevich ('920 B2) discloses a compact solid-state light source (Figure 7A) comprising:

- light-emitting diode (LED) 401 emitting white (Figures 7A and 7B, column 1, lines 65-67; column 2, lines 1-9; and column 7, lines 15-17).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the a light-coupling device of Matsubara by providing the bare LEDs emitting white light as taught by Kazakevich ('920 B2) to provide white light for the benefits of illumination with high intensity.

Regarding claim 4, Matsubara in view of Kazakevich ('920 B2) discloses the light-coupling device further comprising white-light emitting bare LED. However, neither combined nor individual teaching of Matsubara and Kazakevich ('920 B2) specifically discloses the bare LED emitting a broadband visible light including at least 470-700nm.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to realize that white light emitted by the bare LEDs is inherently a broad-band visible light including 470-700nm.

Regarding 5, dependent on claim 2, Matsubara discloses the light-coupling device comprising white-light emitting bare LED. However, Matsubara does not specifically disclose the bare LED has a light-emitting area about 1mm square.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the compact solid-state light source of Matsubara by providing an LED having about 1mm square light-emitting area, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claim 6, dependent on Claim 2, Matsubara discloses a light-coupling device comprising a bare-chip solid-state light-emitting device (LED-chip). However, Matsubara does not specifically teach the LED-chip including a white-light emitting substance excited by the bare LED chip.

On the other hand, Kazakevich ('920 B2) discloses a compact solid-state light source (Figure 7A) comprising:

- light-emitting diode (LED) 401 including a white-light emitting substance excited by the bare LED chip (Figures 7A and 7B, column 1, lines 65-67; column 2, lines 1-9; and column 7, lines 15-17).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the a light-coupling device of Matsubara by providing the bare LEDs including a white-light emitting substance excited by the bare LED chip as taught by Kazakevich ('920 B2) to provide white light for the benefits of illumination with high intensity.

Regarding claim 37, dependent on claim 36, Matsubara in view of Kazakevich ('920 B2) discloses the light-coupling device meeting the limitations in similar manner as applied to claim 6 detailed above.

Regarding 7, dependent on claim 2, Matsubara discloses the light-coupling device comprising white-light emitting bare LED. However, Matsubara does not specifically disclose the bare LED drawing up to 5 watts.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the compact solid-state light source of Matsubara by providing an LED sized to draw power up to 5 watts, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding each of claim 23, dependent on claim 1; and claim 31, dependent on claim 30, Matsubara discloses a light-coupling device (Figure 1) comprising a bare-chip solid-state light-emitting device (LED-chip) optically coupled to a light guide. However, Matsubara does not specifically teach the light-coupling device located within an endoscope.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to locate the light-coupling device of Matsubara locate within an endoscope, which is well known in the art as evident in Figure 14 of Kazakevich ('920 B2).

Further, it has been held that a recitation with respect to the manner in which a claim apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitation.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (Japanese Patent No.: JP 5264871), hereinafter referred as Matsubara.

Regarding 9, dependent on claim 8, Matsubara discloses the light-coupling device comprising optical fibers. However, Matsubara does not specifically disclose the fiber optics having diameter about 30-50 micrometers.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the compact solid-state light source of Matsubara by providing fiber optics having diameter about 30-50 micrometer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (Japanese Patent No.: JP 5264871) in view of Kazakevich (US Patent No.: 6,921,920 B2), as applied to Claim 1 above, and further in view of Matsumoto (US Patent No.: 6,318,887 B1).

Matsubara discloses the light-coupling device comprising optical fibers. However, Matsubara does not specifically disclose the light-coupling device being a self-contained illumination device including a battery power source.

On the other hand, Matsumoto ('887 B1) discloses an endoscope (Figure 1) including a plurality of LEDs 18 energized with a battery power source 14 (Figure 1, column 2, lines 62-64).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the compact solid-state light source of Kazakevich ('920 B2) by providing a battery power source as taught by Matsumoto ('887 B1) for the benefits of portability of the device to remote locations.

12. Claims 14, 25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (Japanese Patent No.: JP 5264871), hereinafter referred as Matsubara, in view of Ono et al. (US Patent No.: 4,212,021).

Regarding claims 14, Matsubara discloses a light-coupling device (Figure 1) comprising a bare-chip solid-state light emitting device optically coupled to a light guide having a proximal light-receiving end adjacent the light-emitting surface.

However, Matsubara does not specifically teach the proximal end of the light guide being positioned directly on the light-emitting surface of the bare-chip solid-state light emitting device.

On the other hand, Ono ('021) discloses a light-emitting device including a bare-chip solid-state light emitting device (Figures 6a and 6b) optically coupled to a light guide 65 having a proximal light-receiving end directly on the light emitting surface of the bare-chip solid-state light emitting device (Figures 6a and 6b, column 5, column 60-68; and column 6, lines 1 and 2).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the a light-coupling device of Matsubara by providing and positioning the light guide as taught by Ono et al ('021) for the benefits of highly efficient optical coupling of the light source with an light guide or optic fibers.

Regarding each of claims 25 and 33, Matsubara discloses the a light-coupling device meeting the limitations, except the following, in similar manner as that applied to Claim 1 as detailed in section 4 of this office action.

However, Matsubara does not specifically teach the proximal end of the light guide being positioned directly against the light-emitting surface of the bare-chip solid-state light emitting device.

On the other hand, Ono ('021) discloses a light-emitting device including a mechanical light-guide fixing device 64 coupled to the proximal end of a light guide 65 (Figures 6a and 6b); the proximal light-receiving end being held directly against the light emitting surface of the bare-chip solid-state light emitting device (Figures 6a and 6b, column 5, column 60-68; and column 6, lines 1 and 2).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the a light-coupling device of Matsubara by providing and positioning the light guide as taught by Ono et al ('021) for the benefits of highly efficient optical coupling of the light source with an light guide or optic fibers.

13. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartung (US Patent No.: 6,932,599 B1).

Regarding claim 26, Hartung ('599 B1) discloses an irradiation unit (Figure 1) for medical application, and the irradiation unit 1 comprising:

- a high-power solid state light –emitting device 12 positioned within a handle 10 (Figure 1, column 6, lines 11 and 15); and
- a light guide 18 having its proximal end positioned adjacent the high-power solid state light emitting device 12, and the distal end farther from the high-power solid state light emitting device 12 (Figure 1).

Although, Hartung ('599 B1) meets almost all limitations of the Claim 26, Hartung ('599 B1) does not identify the equipment as an endoscope.

It has been held that a recitation with respect to the manner in which a claim apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitation.

Regarding claims 27 and 28, Hartung ('599 B1) discloses the irradiation unit 1 further comprising:

- a battery 13 powering the high-power solid state light emitting device 12, and the distal end farther from the high-power solid state light emitting device 12 (Figure 1, column 6, lines 15 and 16); and
- the proximal light-receiving end of the light guide 18 held directly against the high-power solid-state light-emitting device 12 (Figure 1, column 6, lines 11 and 15).

Response to Arguments

14. Applicant's arguments filed on December 5,2005 with respect to the 35 U.S.C. 102(e) rejections of claims 1-4, 6, 8, 10-14, 23 and 25; and 35 U.S.C. 103(a) rejections of claims 5, 7, 9, 15-22, 24 and 26-31 have been fully considered but are moot in view of the new ground(s) of rejections. Applicant's amendment necessitated the new ground of rejections presented in this office action.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Matsubara (Japanese Patent No.: JP 5313045), Toyama (US Patent No.: 6,776,537 B2), Althaus et al. (US Patent No.: 6,092,935) and Kent et al. (US Patent No.: 4,101,197)

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S Sawhney whose telephone number is 571 272 2380. The examiner can normally be reached on 6:15 - 2:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571 272 2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2/10/2006

ALI ALAVI
PRIMARY EXAMINER